# P-016

**Police Modifier Bulletin**

***SVE BULLETIN***

***SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE***

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Date: 24 January, 2013

## 2013 Sedan & Utility Interceptor Wiring Guidelines

**Models Affected**
2013 Sedan & Utility Interceptors beginning Job #1 2013MY.

**Purpose**
This bulletin provides guidelines for wire routing, splicing, and repairs. The locations of the front power access points, connector pinouts, vehicle signals (i.e., door ajar, vehicle speed, brake sense, etc.) and rear power points for both the Sedan and Utility Interceptors are identified.

Procedures and illustrations for obtaining access to the power access and vehicle signal points are also included.

An example of a safety warning is provided. All components and systems anticipated to be encountered when working on a vehicle should be considered and taken prior to beginning work and safety.

# 2013 Sedan & Utility Interceptor Wiring Guidelines

**General Guidelines**

- Provide circuit protection (fuses) for all wiring. The fuse rating should not exceed either the rated wiring current capacity or the total current requirements for all the add-on components on the circuit. Install fuses as close to the point of tapped power as possible.
- Document all revisions to the electrical system and place with the vehicle Owner's Literature. Color code and/or label all revisions or additions to wiring.
- Provide protective covering in all areas that could be damaged during normal equipment installations.
- Disconnect the negative battery cable of vehicles stored on site to reduce the possibility of draining the battery by lights or other equipment.
- Do not allow control panels attached to the instrument panel to protrude into the driver and passenger air bag deployment zones. For additional information, refer to Section 5: Reference Information in this guide.
- Do not install switches and gauges in the driver or passenger knee impact areas.
- Inspect all Ford gauges, lights and switches for correct operation after instrument panel work Is performed.
- Properly secure all wiring relocated or removed while working behind the instrument panel to prevent chafing, squeaks and rattles.
- Provide adequate retention for wiring harnesses so that they are clear of bolts, corners or edges which could abrade the wires during normal vehicle operation.
- Anticipate misrouted wiring situations and protect all wiring from penetration by screws and raw edges.
- Weather-seal all electrical connectors exposed to the elements.
- Do not use quick splice connectors or wire nuts.
- Install the fuse panel so fuses are readily accessible.
- Make sure that connections are easily accessible for assembly and service.
- Make sure submersible connectors do not lose their seals under extreme assembly conditions such as bending wires 90 degrees immediately after the connector.
- Whenever using connectors, use a socket (female) connector on the electrical source side and a plug (male) connector on the electrical load side to reduce the possibility of a short circuit when disconnected.
- Air bag restraint systems must remain intact as received from Ford Motor Company. Before modifications are done to the vehicle, the system must be disarmed by following the instructions provided in the current Crown Victoria Workshop Manual.
- Adherence to the above guidelines is not to be construed as approval by Ford Motor Company of any specific revisions or additions to the vehicle's original electrical system.

# 2013 Sedan & Utility Interceptor Wiring Guidelines

**Keep-Alive Memory Power**

The electronic engine and transmission control modules require battery power to be supplied at all times to maintain the keep-alive memory. Keep this in mind when installing load disconnect switches or solenoids.

**Equipment Grounding Guidelines**

- Do not ground the body to the transmission or transmission crossmember. Ground accessories to the chassis or the vehicle battery.
- Splicing into circuitry relating to the electronic engine and/or transmission control systems is not acceptable because of the adverse effect on the electronic system operation.
- Adequately protect electrical connections exposed to the elements.

**Wire Insulation**

- Polyvinyl Chloride (PVC), rated at 90°C (194°F), is the standard wire insulation that is acceptable for inside body use but is not acceptable for underhood/underbody wiring.
- Hypalon insulation should be used on links only (Ford Specification ESB-M1L54-A).
- Cross-linked Polyethylene (XPLPE or SXL), rated at 135°C (275°F), is the required insulation for underhood/underbody applications (Ford Specification ESB-M1L123-A).
- GXL can be used as an alternate wire (Ford Specification ESB-M7L85B) as long as the concentricity specifications are met. To provide a water-resistant seal in conjunction with crimp connectors, a Duraseal crimp connector is recommended since it is designed to account for outside wire diameter that is smaller than the present SXL wire.

**Terminals and Connectors**

Connector Types

- Submersible (Sealed) — A connector that is capable of being immersed in water.
- Weather-resistant — A connector that will retain its sealing and connection qualities while being exposed to adverse weather conditions.
- Duraseal crimp — A supplier trade name for a sealed wiring repair or splice.

When a connection is not defined (typical situation — harness-to-harness connectors), the following suggestions should be implemented:

- **Determine the connector type.** If it will be located in a hostile environment, use a submersible (sealed) connector; if not, use an open connector. A hostile environment is defined as being exposed to water and/or salt accumulation and/or high temperatures (i.e., underhood, exterior panels and footwells). Use in-line connectors with secondary locks to prevent the terminal from being pushed out.
    - — Do not use single wires smaller than 14-gauge in a 2-way or larger weather-resistant connector (the very large style), since the wire may break during disengagement.
    - — Use Hypalon, XLPE or Elexar insulation in submersible connectors to maintain sealing integrity. PVC is not acceptable because it cold flows and allows setting in a deformed pattern, therefore compromising the integrity of the seal.

- Determine the terminal type. Base your decision on wire gauge, current carrying capacity, connector type and insulation type.
  - — Use non-detent low insertion force terminals whenever possible.
  - — Do not use low insertion force female terminals in weather-resistant connectors.
  - — Analyze circuit requirements (signal levels, current, voltage) to determine the proper Plating material (such as gold). Use of non-plated terminals is not recommended.
  - — Do not use plugs to seal holes in micropin connector grommets. It is very easy to forget to insert them during manufacturing and ruin the seal. Use a grommet with only the necessary number of holes or use dummy wires at least 600 mm (24 in) long.
  - — Fully align connectors prior to terminal connection — terminal cavities should have Minimum tolerance to prevent terminals from floating, bending or pin push-out during mating/engagement.
  - — Make sure connectors of similar type and color are identifiable to the operator to eliminate crossed connections and minimize assembly time. Avoid using similar types and colors of connectors close together.
  - — Be sure that connectors have positive locking devices that allow easy installation with a low insertion force and easy removal. The connector snap should be easily felt and heard.
  - — Eliminate the use of edgeboard, tang-type and molded-over connectors. The use of blade-type weather-resistant connectors is restricted to high current applications which cannot be handled by submersible connectors.

**Circuit Protection and Electrical Load**

- Modification to existing vehicle wiring should be done only with caution and careful consideration of effects on the completed vehicle's electrical system. Anticipated circuitry should be studied to determine the required circuit protection and to avoid feedback loops.
- Added circuitry must be protected either by a base vehicle fuse or circuit breaker, or by a similar device supplied by the modifier.
- When adding loads to a base vehicle-protected circuit, make sure that the total electrical load through the base vehicle fuse or circuit breaker is less than the device's load rating.
- Use 80% of the fuse rating to determine maximum steady state load to reduce nuisance fuse failures.
- Use 135% of the fuse rating when sizing wiring to protect the circuit in the event of an overload. Fuses will last for 1 hour at 135% of their rating.
  - — Total current draw is the sum of the base vehicle's circuit current requirement (measured with an ammeter) and the anticipated add-on component current requirements.
  - — Never increase the rating of a factory installed fuse or circuit breaker.
  - — If the total electrical load including additional electrical components, on any circuit, is Less than the fuse protection rating or the capacity of some limiting component (switch, relay), the items to be added can be connected directly to that circuit. The headlamp switch circuits should never have additional lighting or electrical components directly connected.

**Circuit Protection and Electrical Load (continued)**

— Added devices that exceed the current capabilities of the factory-installed system are best controlled through the use of a relay or separate switch. The coil of the relay can be fed from the circuit in the factory harness (now acting as a signal circuit) with added wiring providing feeds to the added electrical device. The relay selection is important and depends on current requirements, number of cycles expected in the relay lifetime, whether the relay is to be operated intermittently or for long periods of time and whether the relay is exposed to weather conditions or is installed in a protected area. When the current requirements of a circuit exceed the capacity of an available relay, the load should be reduced or divided through the use of additional relays.

**Wire Protection Requirements**

General Notes:

- Anticipate problems and design accordingly. Try to anticipate what could go wrong and modify your designs to address any adverse impact.
- Review all connector applications and electrical systems to determine the need for solder, grease, weather-resistant or sealed connectors. Make sure components and wire insulation are compatible with greased connectors (important for long-term durability).
- Make sure that drip loops or other means are provided to prevent water leakage into the vehicle through wiring assemblies that pass through the dash panel.
- Use greased or sealed connectors in floor pan troughs which are subject to moisture coming through the carpeting.
- Use XLPE insulation for uncovered runs that exceed 305 mm (12 in).

**Electrical Protection**

- Correctly route wires away from noise-generating wires or components. However, if routing near noisy wires or plugging into noisy components is unavoidable, additional protection must be designed into the harness.
- Shielding — Electro Magnetic Interference (EMI) — Consider shielding if you must route close to high-current or noisy circuits. Use shielded wire and ground one side. Seal all splices in wire assemblies that use bare coaxial shielding (braid or tape) for EMI suppression, and insulate or tape over all shielding ends that terminate near any open connectors. This prevents splice and terminal shorts to the shielding. Minimize the length of conductors which extend beyond the shield. Failure to do this reduces the effectiveness of the shield.
- Spike suppression, in general, is accomplished by connecting a diode or resistor-diode combination across the terminals of the noisy component. The diode should be sufficiently close to the component (both electrically and physically) so that inductive spikes are clamped off. Make sure the diode is connected with the proper polarity.

Proper routing and retention will reduce the likelihood of chafing or pinching. When this ideal routing is unattainable, the following additional protection is needed:

**Mechanical/Environmental Protection**

- Tape — Tape is the most basic means of protection. It contains the wires in a loose bundle and provides limited environmental protection. It does not protect against chafing and pinching.
  - — Kendall Polyken Fiberglass Base Tape (Ford Specification ESB-M3G38-A) is used for engine compartment applications. This durable tape provides against cut-through and abrasion commonly found in underhood applications.
  - — Polyken 267 is a substitute tape that may be used in lower temperature areas of the Engine compartment (apron area).
- Convolute — Use convolute for all underhood/underbody applications or when increased temperature, abrasion or pinch resistance is required. Convoluted tubing comes in different diameters and materials to accommodate different temperature ranges and harness sizes.
  - — Use polyethylene convolute when abrasion is the only consideration; this convolute is adequate up to 96°C (205°F) maximum. Use nylon convolute when underhood/underbody or abrasion and temperature are considerations; nylon convolute is adequate up to 177°C (350°F) maximum.
  - — On all engine-mounted wiring or bend points. Use vinyl tape on the outside of the Convolute to prevent wiring from looping out. This tape must be able to withstand temperatures 135°C (275°F) or higher.
  - — Tape convolute junctions with abrasion-resistant tape (Polyken 267, fiberglass).

- Scroll — Similar to convolute, but without the ridges. Scroll is used where harness rigidity is required, especially for maintaining critical locator dimensions. Use scroll for short lengths only, as it is quite inflexible.

Note: This is not meant to be an all-inclusive list of methods for physically protecting the wires. There are other means of protection available that are not listed.

**Grommets and Sealing Requirements**

Any additional wiring routed through sheet metal must pass through a grommet that both seals The opening and locates the wire(s). Two-piece grommets (rubber with plastic inserts) are recommended to facilitate installation and retention.

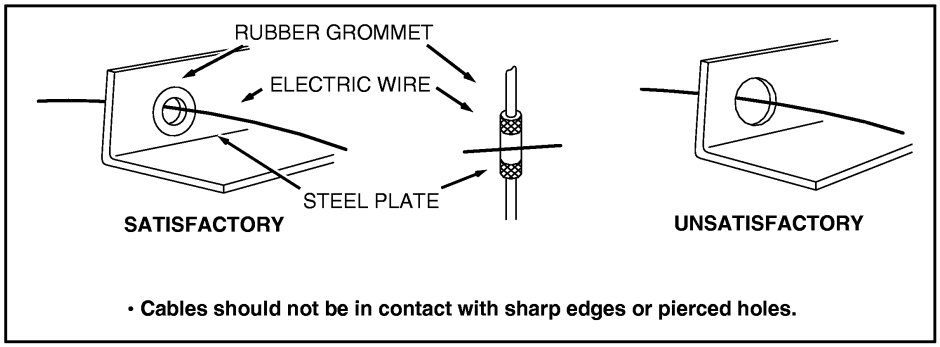
- Locate grommets so they are accessible for proper seating (achieved by pulling) in sheet metal holes.
- Ramp grommets at the insertion end to facilitate installation and sealing.
- Be sure that the direction of the hole punch is in the direction of grommet seating and the hole is burr-free.
- Make sure the grommet moulding compound will adhere to the harness to prevent slippage.
- Make sure the grommet will withstand the environment (temperature, splash).
- Be sure that holes are large enough to allow the installation of the harness without causing circuit damage.
- Use adhesive tape on main trunks or branches with at least a 50% overlap to prevent wicking through grommets. Be certain to diaper-wrap the takeouts.

**Wire Routing**

**⚠ WARNING: Do not place electrical component attachments or ground screws Adjacent to vehicle fuel tanks, fuel filler pipes, fuel lines, fuel vapor lines or carbon canisters. Failure to follow these instructions may result in personal injury in the event of a collision.**

Wire harness routing should conform to the following:

- Protect wires routed through holes in sheet metal or castings with a grommet whether or not conduit is used (see figure below).

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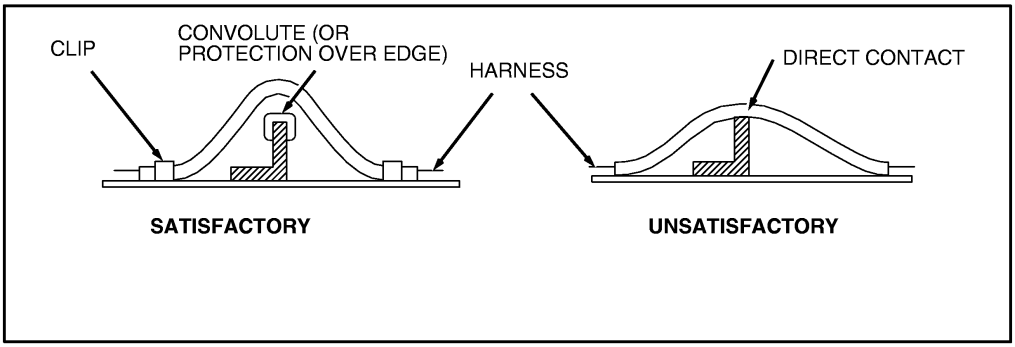
• Route wires to avoid metal edges, screws, trim fasteners and abrasive surfaces. When such routing is not possible, use protective devices (shields, caps) to protect the wires. Cover metal edges with a protective shield and fasten the wiring within 76 mm (3 in) on each side of the edge (see figure below).

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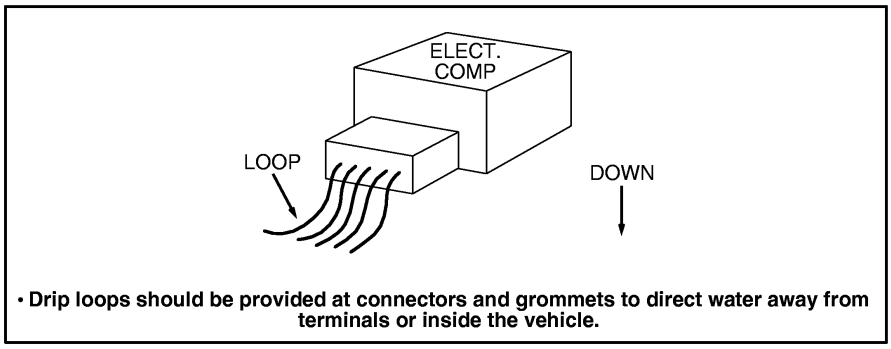
• Route wires to provide at least 76 mm (3 in) of clearance to moving parts in their extreme movement location, unless positively fastened and protected by a conduit.
• Avoid wire routing without conduit in areas where temperatures exceed 82°C (180°F). Minimum clearance of 152 mm (6 in) should be maintained from exhaust system components. Heat insulation and heat shields must be used on the wires routed in high-temperature areas.
• Make certain that all underhood or underbody wiring is cross-linked polyethylene high temperature insulation wire 135°C (275°F) (minimum rating) consistent with SAE specification J1128 Type SXL wire. Normal PVC wire must not be used in underhood or underbody applications.
• Make sure all ground locations are readily accessible for installation, service and verification.
• Do not place ground attachments in high-splash areas.
• Do not route underbody wiring over the exhaust system.
• Underhood/underbody wiring must be routed in conduit for protection. Minimum conduit rating is 177°C (350°F).

## Wire Retention and Routing

Use the following criteria to determine the location of retainers:

- Size and weight of wire bundle.
- Holes with poor accessibility that prevent installation of locators.
- Movement of wires that can result in abrasion, squeaks and rattles.
- When wiring is routed between 2 members where relative motion can occur, the wiring should be secured to each member with enough wire slack to allow flexing without damaging the wire.
- Wiring exposed to weather must provide a drip loop to prevent moisture from being conducted into the device through the wire connection (see figure below).




**• Drip loops should be provided at connectors and grommets to direct water away from terminals or inside the vehicle.**

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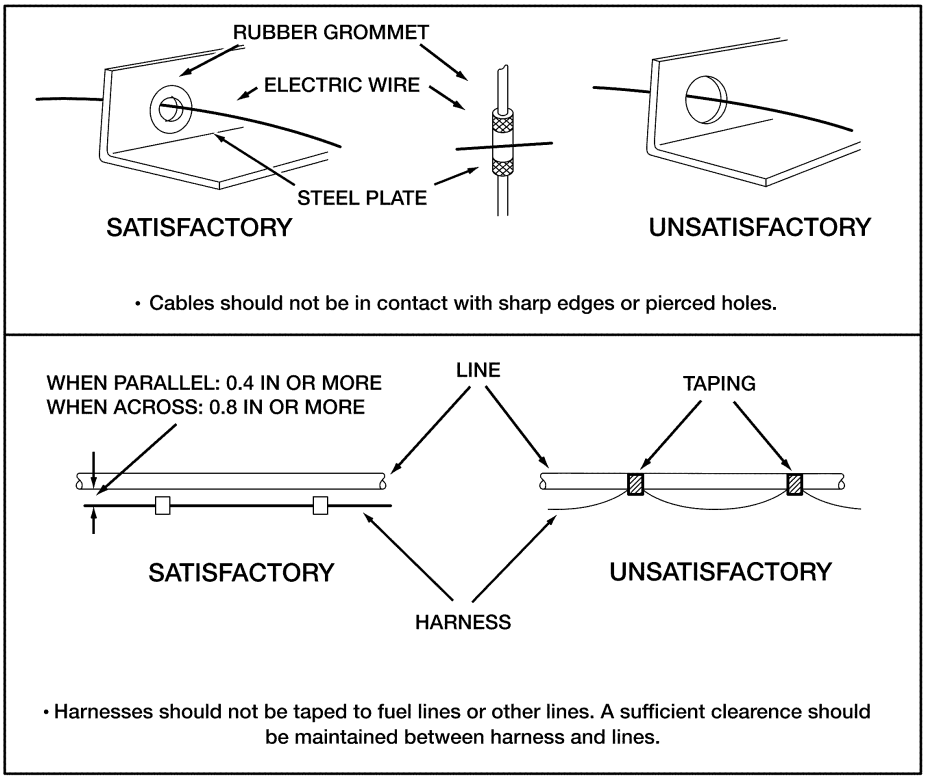
- Avoid routing wires into areas exposed to wheel splash. When such routing cannot be avoided, adequate clipping and/or protective shields are required to protect the wires from stone and ice damage. Allow adequate slack in wiring between the engine and stationary components to compensate for engine roll.
- Avoid routing wires under the frame side members or at points lower than the bottom frame flange.
- Use plastic ‘‘zip’’ straps for ‘‘bundling’’ only (securing to other wires).
- The wire retainers and grommets installed by the assembly plant are usually designed to accommodate only the Ford-installed wires. Additional wiring or tubing should be retained by additional clips. When added wires or tubes are routed through sheet metal panels, new holes with proper wire protection and sealing must be used.

# 2013 Sedan & Utility Interceptor Wiring Guidelines


RUBBER GROMMET
ELECTRIC WIRE
STEEL PLATE
SATISFACTORY
UNSATISFACTORY
• Cables should not be in contact with sharp edges or pierced holes.
WHEN PARALLEL: 0.4 IN OR MORE
WHEN ACROSS: 0.8 IN OR MORE
LINE
TAPING
SATISFACTORY
UNSATISFACTORY
HARNESS
• Harnesses should not be taped to fuel lines or other lines. A sufficient clearence should be maintained between harness and lines.

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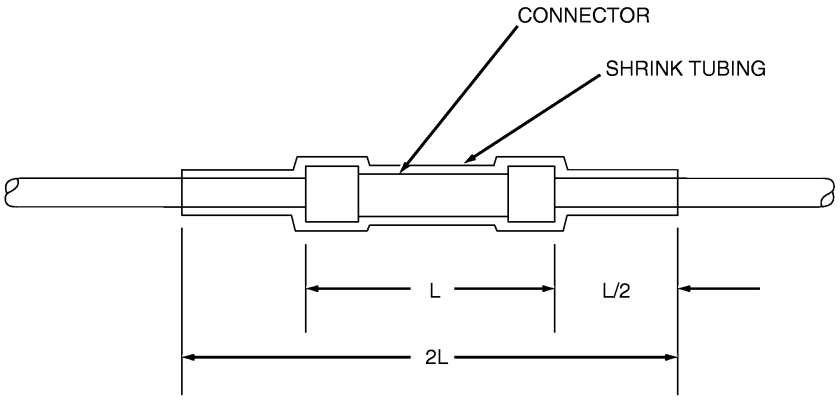
For retainer screws, the following guidelines apply:

- Avoid using fasteners that are too long for the application or are in an area which might damage vehicle components, including wiring, brake lines, fuel tank and lines, powertrain components, exhaust system and suspension.
- Do not use pointed screws for attachments. Also check that screws used in the vicinity of the wiring are blunt-ended.
- To minimize the potential for wiring shorts, do not use drill point screws. Trim components (including wiring shields) should use pin-type attachments instead of screws.
- Always check areas that screws protrude into for verification that an interference condition to other components does not exist.
- Make sure that retainers used are capable of withstanding the environment over the vehicle's life expectancy.

**Splices and Repairs**

For quality splicing and to reduce potential problems, the following guidelines are recommended:

- Stagger the splices within a harness to reduce increased harness diameter. Splice only on straight areas as installed, not on bends.
- Strip wire ends making sure that individual conductor strands are not damaged.
- When soldering, make sure an adequate mechanical joint exists before applying solder. Use only resin-core solder. Acid-core solder should not be used since it may result in corrosion.
- For crimp joints, use butt-type metal barrel fasteners and the proper tool at the appropriate setting for the wire size (such as Motorcraft crimp tool S-9796) specifically designed for this type of work.
- Make sure splice joints are adequately sealed and insulated. In an outside environment, use Duraseal butt connectors or equivalent. A durable substitute splice joint can be achieved by using a bare metal barrel, crimping, flow-soldering and covering with shrink tubing. Quality electrical tape can be used inside the vehicle but is not recommended for an outside environment.
- Be sure that the new wire is not a lesser gauge than its original mating wire.

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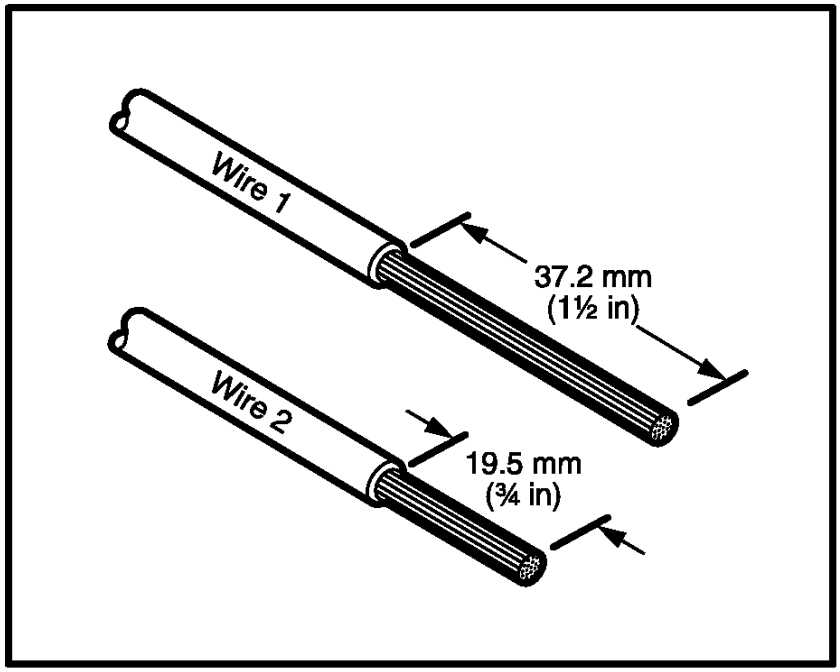
**Recommended Splicing Method — Solder (For 16 AWG and Smaller Diameter Wire Only)**

1. Disconnect the battery ground cable.

2. Strip wires to appropriate length

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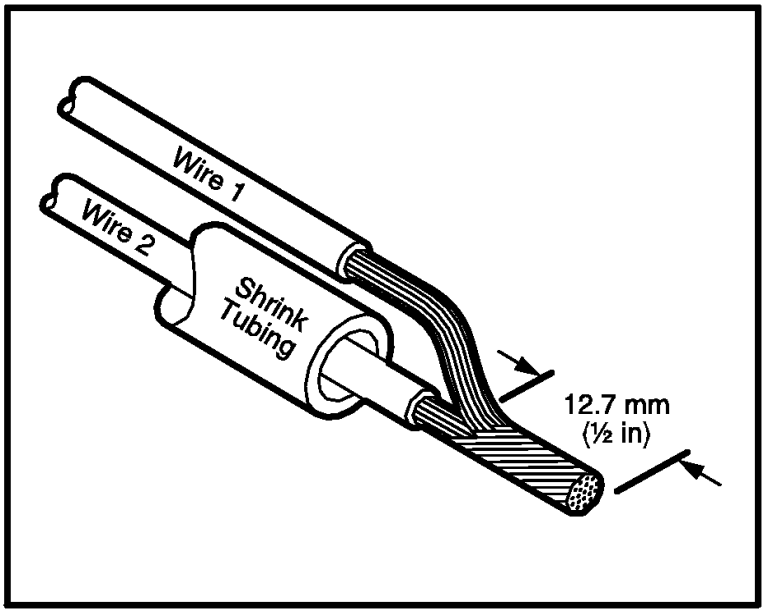
3. Install heat shrink tubing.
4. Twist the wires together.
5. Note: Use resin-core mildly-activated (RMA) solder. Do not use acid-core solder.
   Solder wires together

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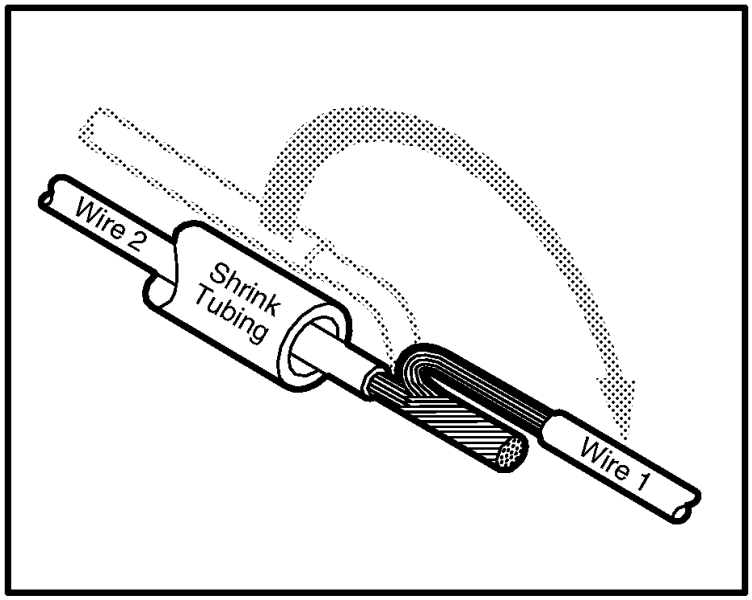
6. Note: Wait for solder to cool before moving wires. Bend wire 1 back in a straight line.

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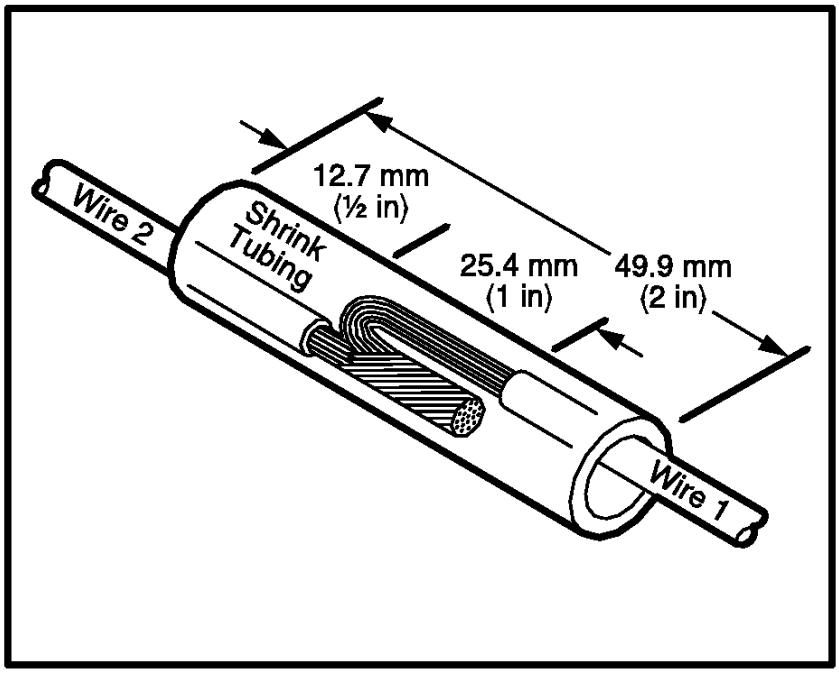
7. Note: Overlap tubing on both wires. Evenly position heat shrink tubing over wire repair.

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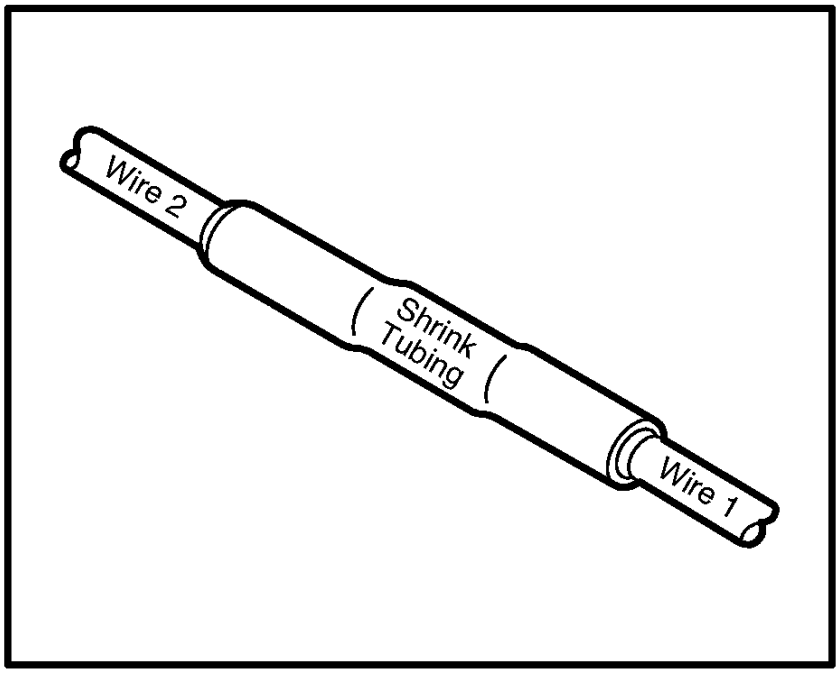
8. Use a shielded heat gun to heat the repaired area until adhesive flows out of both ends of the heat shrink tubing.

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9. Reconnect the battery ground cable.

**Sealed Connectors**

**Ford Part Number Part Name Class**

E6FZ-14488-A Butt Connector C
Gauge: 18-22, Color: Red
E6FZ-14488-B Butt Connector C
Gauge: 14-16, Color: Blue
E6FZ-14488-C Butt Connector C
Gauge: 10-12, Color: Yellow

**Heat Shrinkable Tubing (Heat Shrink) (Ford Specification ESB-M99D56-A2)**

Heat shrinkable tubing is available in various diameters for different splice sizes and configurations. When shrunk, it forms a small, flexible hermetic seal.

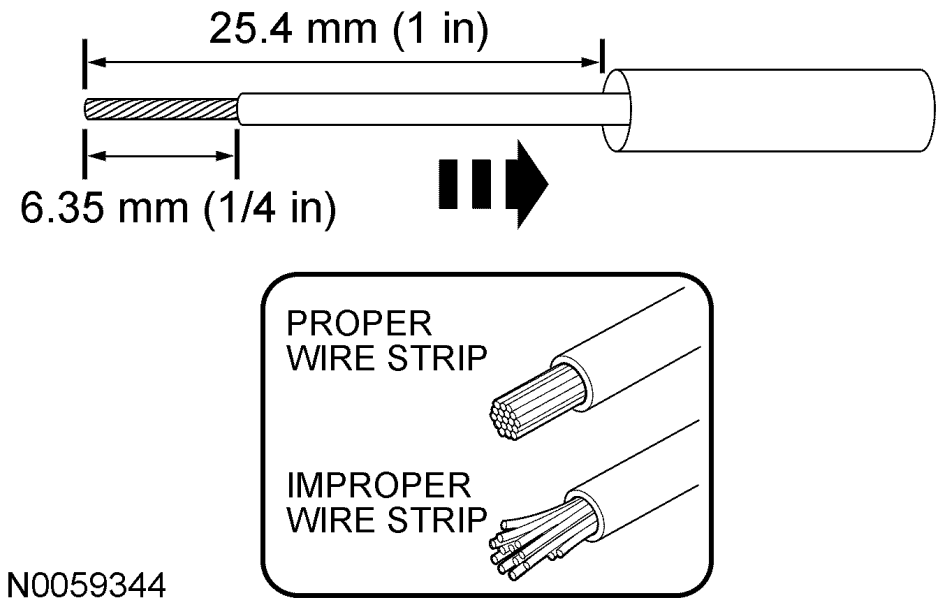
Other methods (tape, PVC mold) do not provide a hermetic seal and are not recommended.

Splice balancing is critical with heat shrink insulation. If the splice is extremely unbalanced (more circuits on one side than the other), heat shrink insulation will not provide a proper seal.

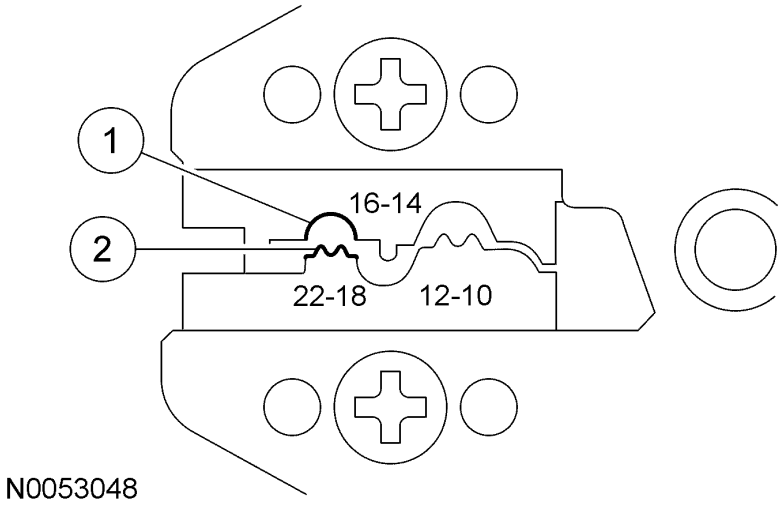
Evaluate the use of double terminals instead of splices where practical in these situations.

**Recommended Splicing Method — Crimp (For 1022 AWG Diameter Wire to Like Wire Diameter)**

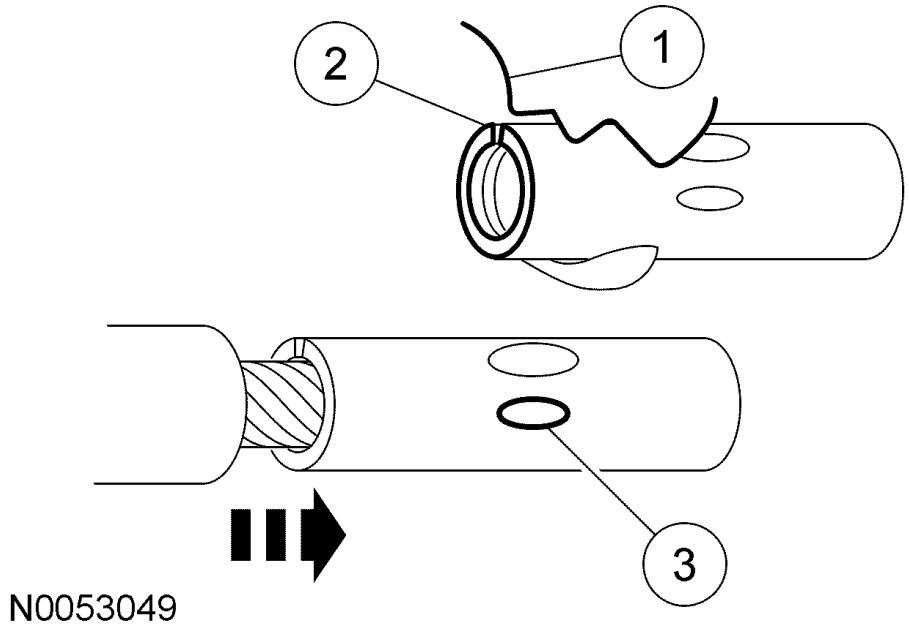
1. Disconnect the battery ground cable.
2. Strip wires to appropriate length.
3. Install heat shrink tubing.




4. Select the appropriate wire slice for the wires to be spliced from Rotunda Wire Splice Kit 164-R5903.
5. Note: Rotunda 164-R5901 Pro-Crimper supplied with the wire splice kit is the only tool that can be used with these splices. Identify the appropriate chamber on the Rotunda Pro Crimper by matching the wire size on the dies with the wire size stamped on the butt splice.
    (1) Cavity
    (2) Indenter




6. Crimp the connector.
    (1) Center one end of the wire splice in the appropriate crimping chamber.
    (2) Insert stripped wire into the barrel.
    (3) Holding the wire in place, squeeze the tool handles until ratchet releases.
7. Repeating

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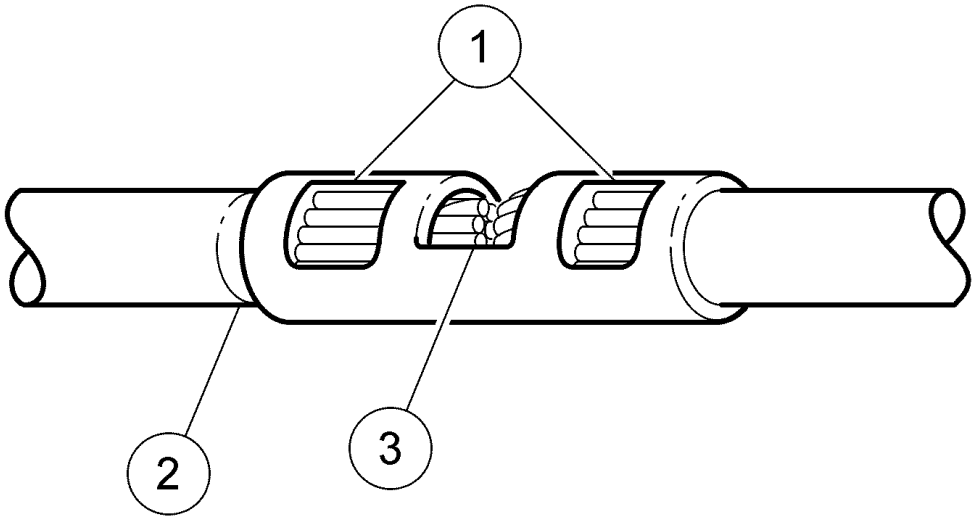
7. Repeating Step 6, crimp the other half of the splice.
8. Check for acceptable crimp.
    (1) Crimp should be centered on each end of the butt splice.
    (2) Wire insulation does not enter butt splice.
    (3) Wire is visible through inspection hole of splices

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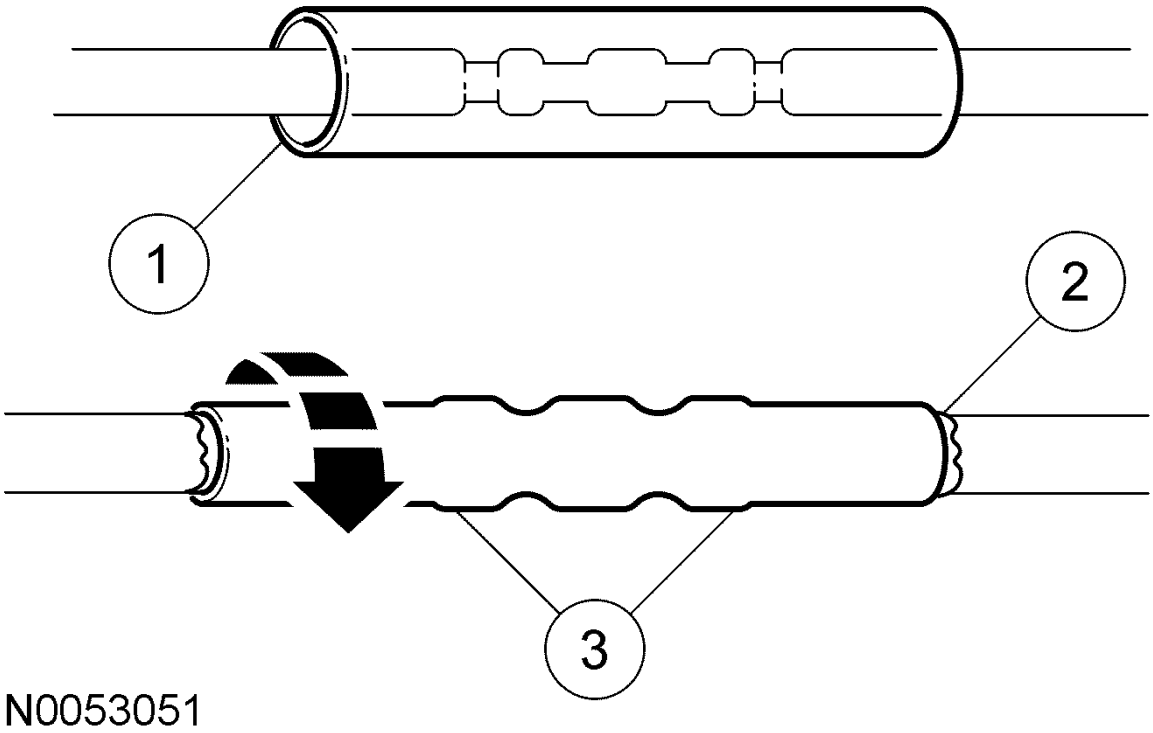
9. Evenly position supplied heat shrink tubing over wire repair.
10. Use a shielded heat gun to heat the repaired area until adhesive flows out of both ends of the heat shrink tubing.




11. Reconnect the battery ground cable.

Heat Shrinkable Tubing (Heat Shrink) (Ford Specification ESB-M99D56-A2)

Heat shrinkable tubing is available in various diameters for different splice sizes and configurations. When shrunk, it forms a small, flexible hermetic seal.

Other methods (tape, PVC mold) do not provide a hermetic seal and are not recommended.

Splice balancing is critical with heat shrink insulation. If the splice is extremely unbalanced (more circuits on one side than the other), heat shrink insulation will not provide a proper seal.

Evaluate the use of double terminals instead of splices where practical in these situations.

# 2013 Sedan & Utility Interceptor Wiring Guidelines

**WARNING: Before beginning any service procedure in this section, refer to Safety Warnings in Section 100-00. Failure to follow this instruction may result in serious personal injury.**

**Adhere to the warnings that affect the area(s) of the Sedan Police Interceptor and/or Utility Police Interceptor that will be worked on.**

**Following is example of Battery Disconnect warning:**

**Battery Disconnect**

**General Procedure**

**WARNING: Batteries contain sulfuric acid and produce explosive gases. Work in a well-ventilated area. Do not allow the battery to come in contact with flames, sparks or burning substances. Avoid contact with skin, eyes or clothing. Shield eyes when working near the battery to protect against possible splashing of acid solution. In case of acid contact with skin or eyes, flush immediately with water for a minimum of 15 minutes, then get prompt medical attention. If acid is swallowed, call a physician immediately. Failure to follow these instructions may result in serious personal injury.**

**WARNING: Always deplete the backup power supply before repairing or installing any new front or side air bag supplemental restraint system (SRS) component and before servicing, removing, installing, adjusting or striking components near the front or side impact sensors or the restraints control module (RCM). Nearby components include doors, instrument panel, console, door latches, strikers, seats and hood latches. Refer to the Description and Operation portion of Section 501-20B for location of the RCM and impact sensor(s). To deplete the backup power supply energy, disconnect the battery ground cable and wait at least 1 minute. Be sure to disconnect auxiliary batteries and power supplies (if equipped). Failure to follow these instructions may result in serious personal injury or death in the event of an accidental deployment.**

**WARNING: Always lift a plastic-cased battery with a battery carrier or with hands on opposite corners. Excessive pressure on the battery end walls may cause acid to flow through the vent caps, resulting in personal injury and/or damage to the vehicle or battery.**

**WARNING: Battery posts, terminals and related accessories contain lead and lead components. Wash hands after handling. Failure to follow these instructions may result in serious personal injury.**

**Battery Disconnect Warning (continued)**

**NOTE:** *When the battery is disconnected and connected, some abnormal drive symptoms may occur while the vehicle relearns its adaptive strategy. The charging system set point may also vary. The vehicle may need to be driven to relearn its strategy.*

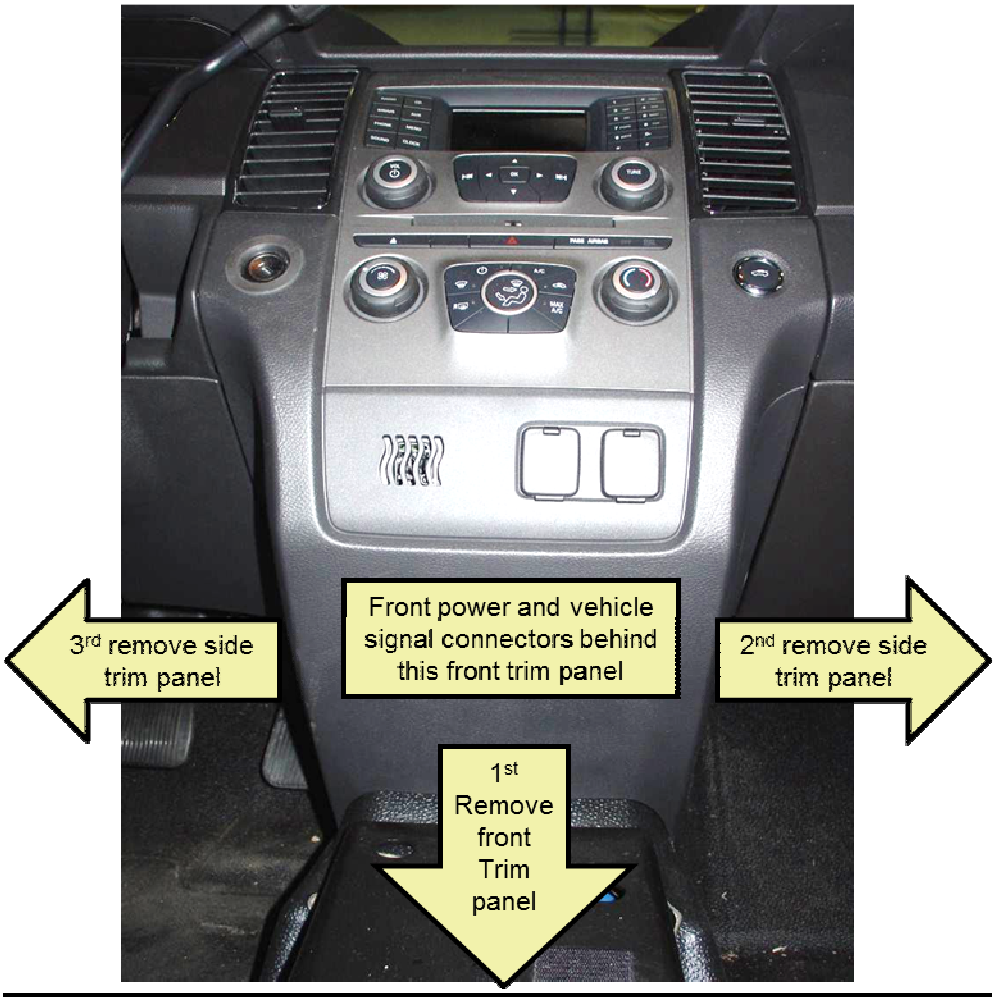
1. Loosen the battery cable terminal nut and disconnect the negative battery cable.
    1. To connect, tighten to 9 Nm (80 lbs-in).
2. **NOTE:** *When disconnecting the battery ground cable to interrupt power to the vehicle electrical system, disconnect the battery ground cable only. It is not necessary to disconnect the positive battery cable.*

   Loosen the battery cable terminal nut and disconnect the positive battery cable.
    1. To connect, tighten to 9 Nm (80 lbs-in).
3. To install, reverse the removal procedure.

# 2013 Sedan Interceptor Front Power Access Point

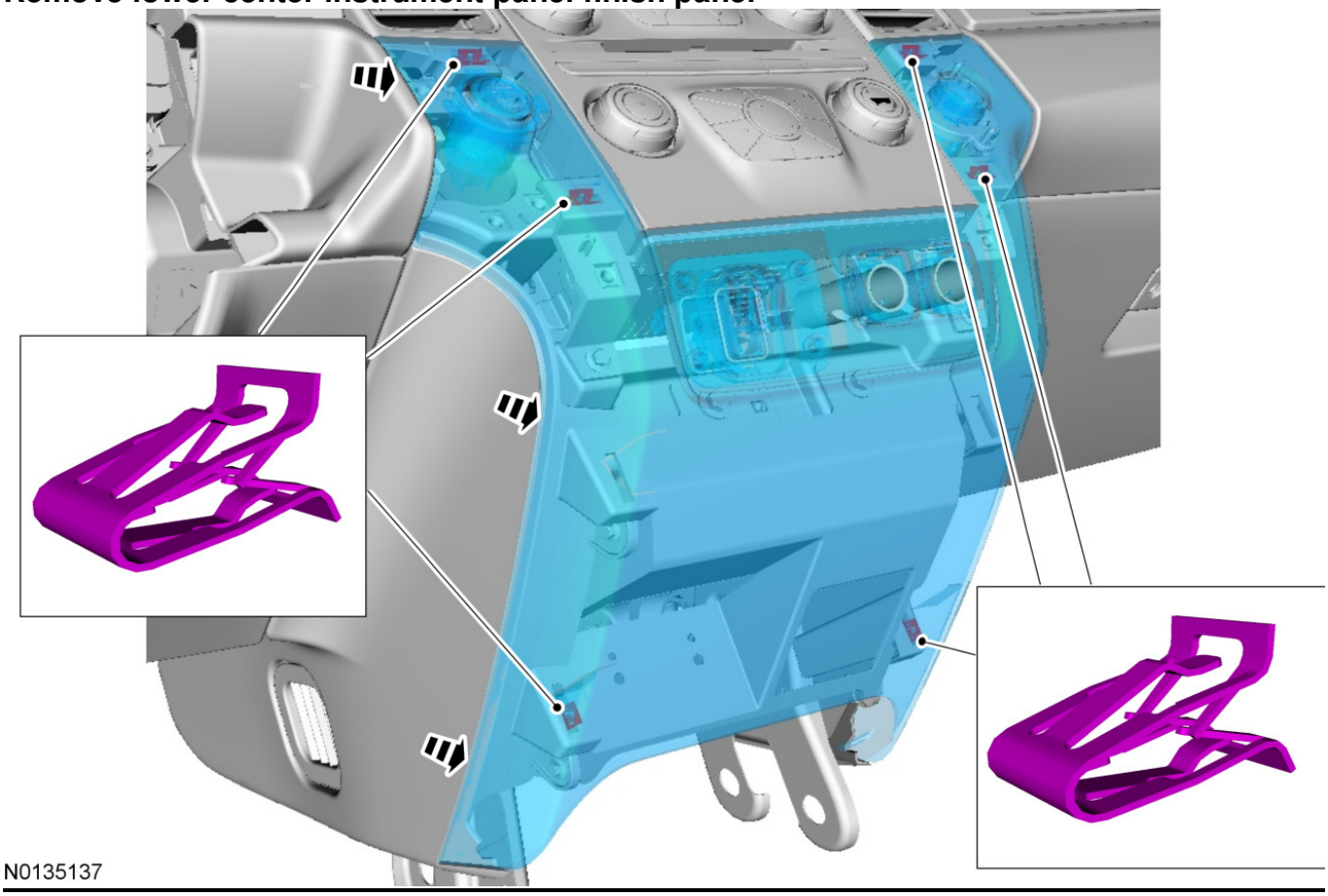
**Front Power and Vehicle Signal Access Area**

- **Located behind lower center instrument panel trim panels**
- **See following pages for removal and installation**


3rd remove side trim panel
Front power and vehicle signal connectors behind this front trim panel
2nd remove side trim panel
1st Remove front Trim panel

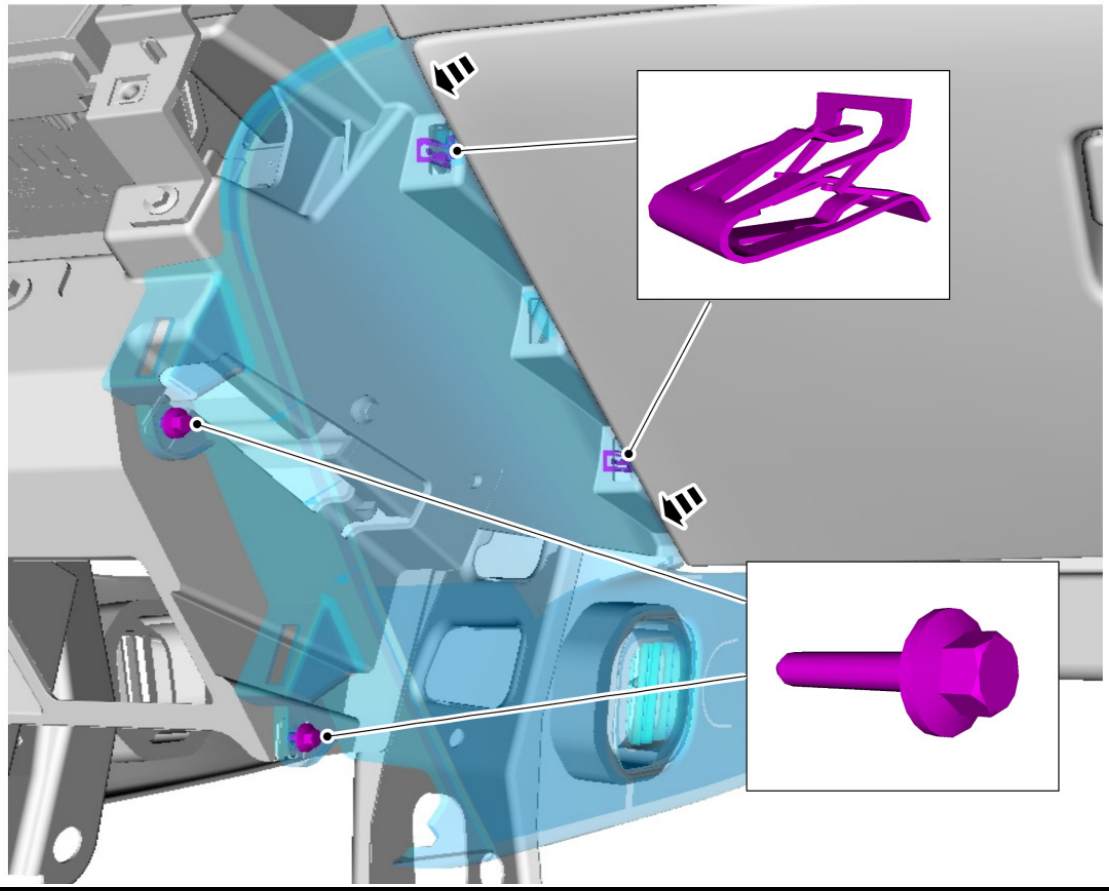
# 2013 Sedan Interceptor Front Power Access Point

## Remove lower center instrument panel finish panel



# 2013 Sedan Interceptor Front Power Access Point

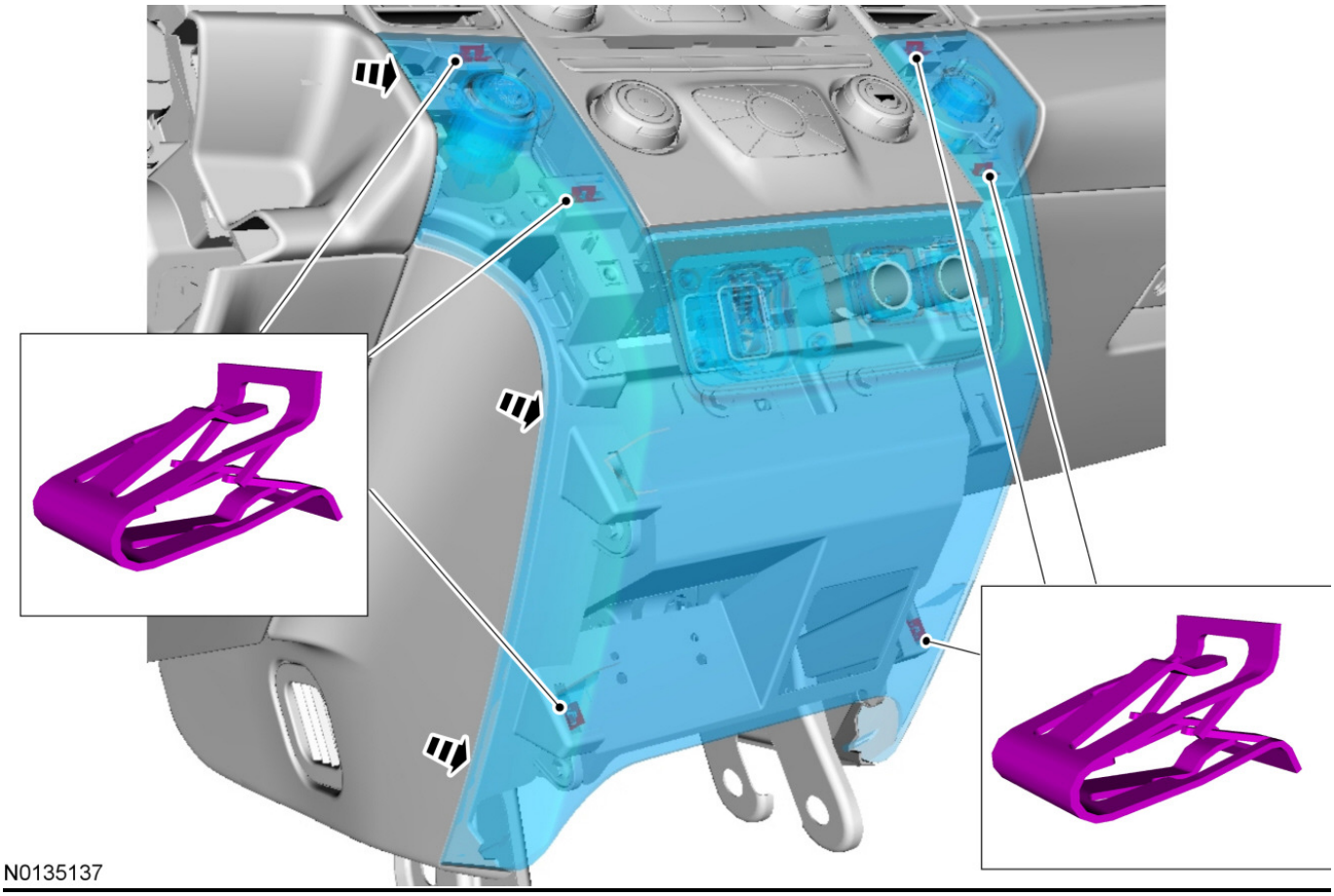
## Remove Passenger Side and Driver Side lower center instrument panel side panels



# 2013 Sedan Interceptor Front Power Access Point

**Reinstall lower center instrument panel trim front panel by reversing removal procedure**

- Align the center stack to the instrument panel opening and reconnect the (4) connectors. **Note: perform "push-click-push" test process to ensure each is secure**
- Align lower driver and passenger side retention tabs located on the inside of center stack panel to the corresponding notches located in the passenger and driver side lower valance panels.
- Position retention clips on the backside of the center stack to the corresponding slots in the instrument panel.
- Push the center stack in until each of the retention clips are fully engaged. Check around the periphery of the center stack to ensure it is flush to the instrument panel upon installation. **Note: Verify the lower driver side and passenger side retention tabs of center stack panel are seated into the driver side and passenger side valance panel notch locations upon installation.**



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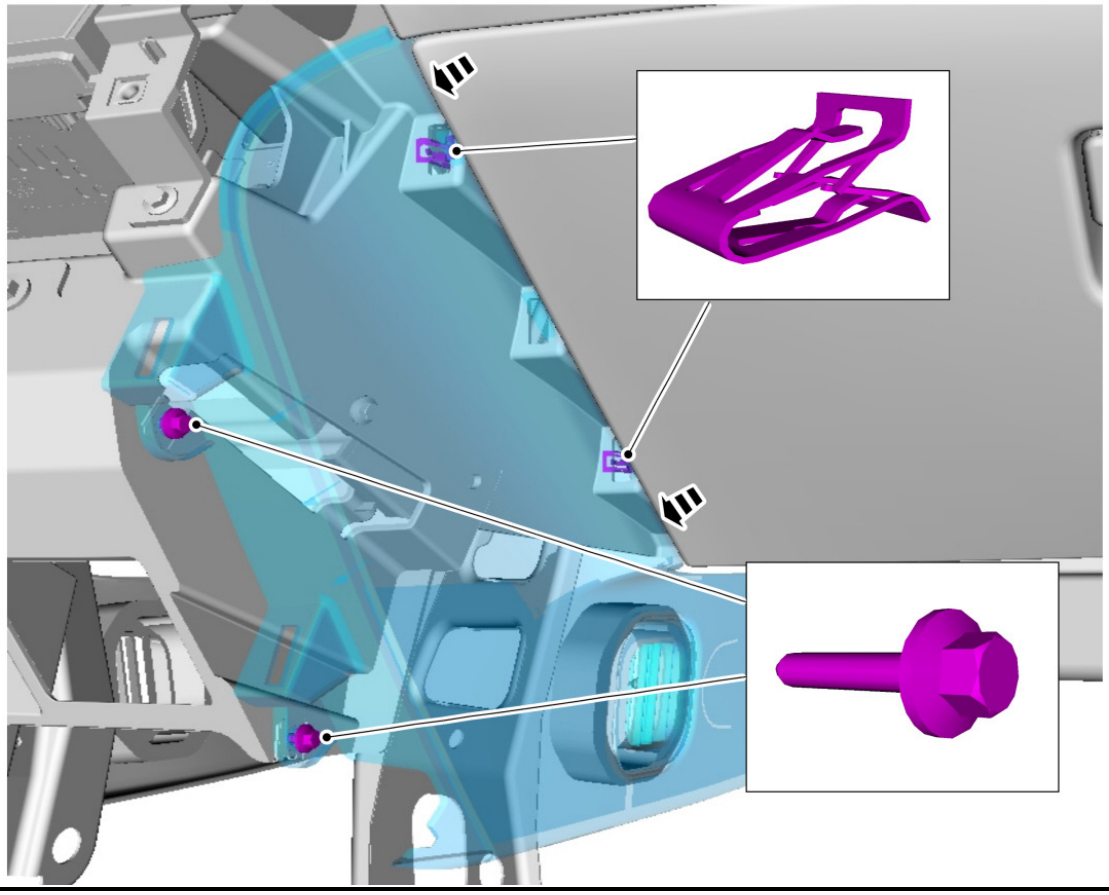
# 2013 Sedan Interceptor Front Power Access Point

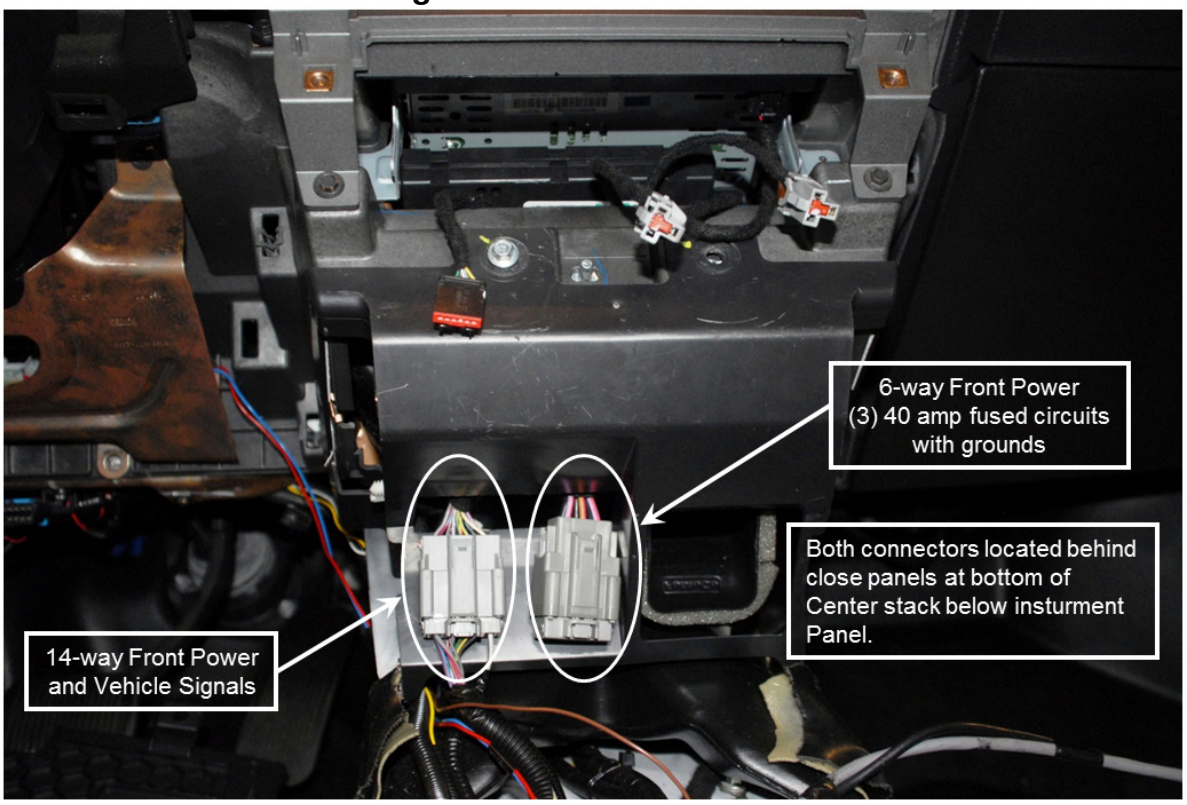
**Reinstall Driver Side and Passenger Side lower center instrument panel side trim panels**

- **Tighten fasteners to 3 NM (27 lbs-in)**



# 2013 Sedan Interceptor Front Power Access Point

## Front Power and Vehicle Signals Access Area

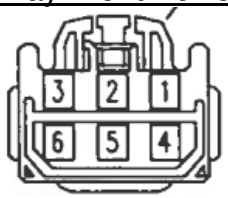



### 14-Way Front Power & Vehicle Signals

Part #: 3U2Z-14S411-BJAC

| Pin # | Description | Fuse | Wire Color |
|---|---|---|---|
| 1 | B + Feed #1 (20A) | IP #2 | GY-RD |
| 2 | Steering Wheel Switch #1 Output (1A) – Grnd | Gnrl Fnctn Module | GY-BN |
| 3 | Steering Wheel Switch #2 Output (1A) – Grnd | Gnrl Fnctn Module | WH-VT |
| 4 | Steering Wheel Switch #3 Output (1A) – Grnd | Gnrl Fnctn Module | GN-BN |
| 5 | Steering Wheel Switch #4 Output (1A) – Grnd | Gnrl Fnctn Module | YE-GY |
| 6 | Start (2 A) | BJB #95 | BN-BU |
| 7 | Run/Start #1 (20 A) | BJB #73 | WH-BN |
| 8 | B+ Feed #2 (20 A) | IP #32 | BU-RD |
| 9 | Vehicle Speed Output (VSS) | PCM | VT-OG |
| 10 | Delay Accessory (15 A) | IP #17 | GN-VT |
| 11 | B + Feed #3 (15 A) | IP #5 | YE-RD |
| 12 | Park Detect Signal (Transmission) | Shifter – Grnd | GN |
| 13 | Driver Door Ajar Signal | IP #9-Grnd | GN-VT |
| 14 | Run/Start #2 (20 A) | IP #74 | VT-BN |

### 6-Way Front Power



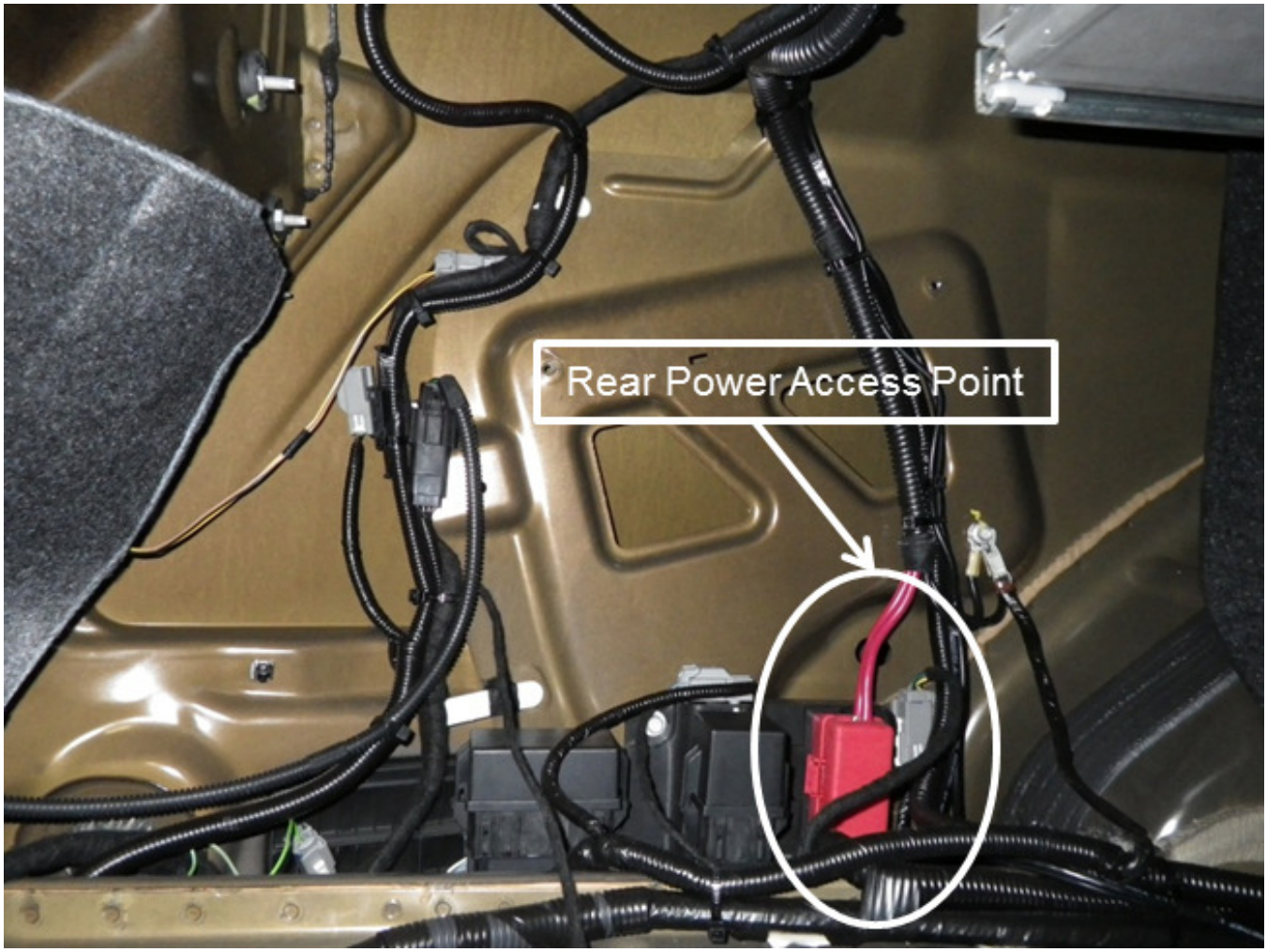

Part #: 3U2Z-14S411-HEA

| Pin # | Description | Fuse | Wire Color |
|---|---|---|---|
| 1 | B + (40 A) | BJB #40 | VT-RD |
| 2 | B + (40 A) | BJB #6 | BN-RD |
| 3 | B + (40 A) | BJB #16 | VT-RD |
| 4 | Ground | IP Tunnel | BK-BU |
| 5 | Ground | IP Tunnel | BK-BU |
| 6 | Ground | IP Tunnel | BK-BU |

# 2013 Sedan Interceptor Rear Power Access Point

**Rear Power Access** – Two fused 50 Amp Lines from underhood Battery Junction Box (BJB)

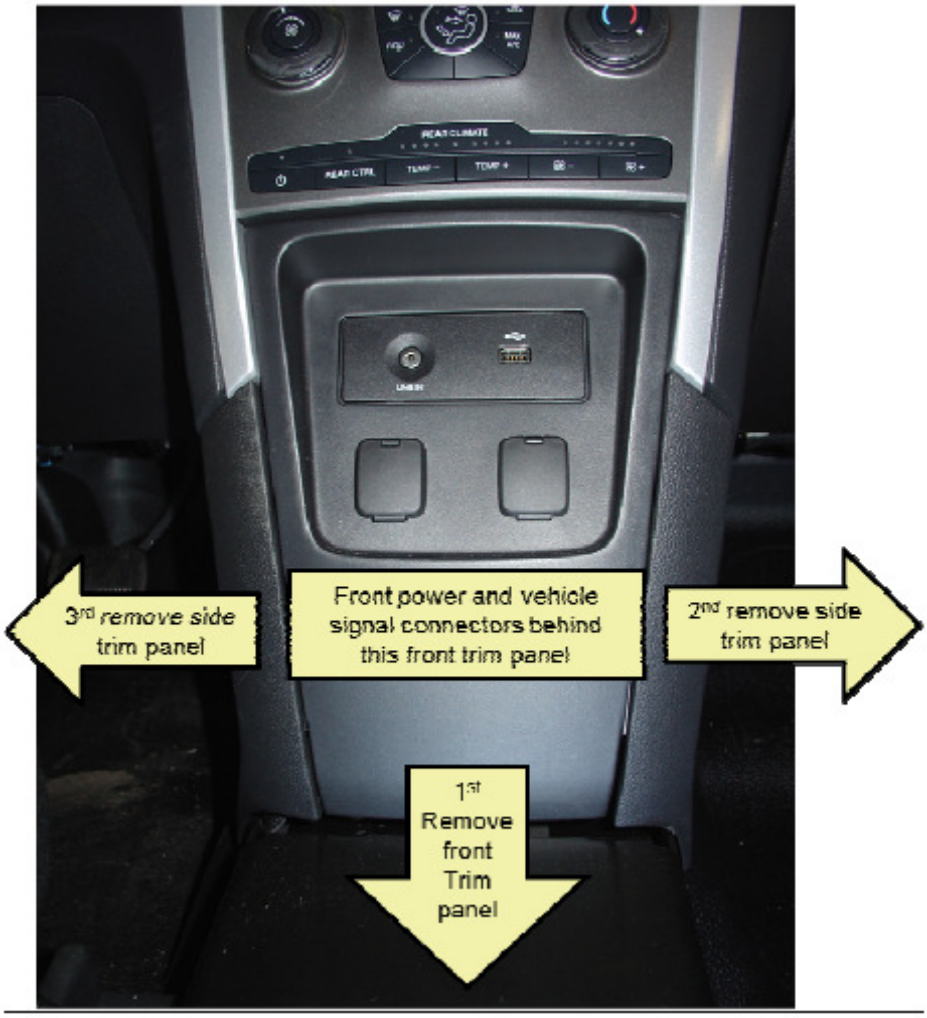
- Feed from BJB #1 and #2



# 2013 Utility Interceptor Front Power Access Point

**Front Power and Vehicle Signal Access Area**

- **Located behind lower center instrument panel trim panels**
- **See following pages for removal and installation**


3rd remove side trim panel
Front power and vehicle signal connectors behind this front trim panel
2nd remove side trim panel
1st Remove front Trim panel

# 2013 Utility Interceptor Front Power Access Point

**Remove driver side and passenger side lower center instrument panel finish panels**

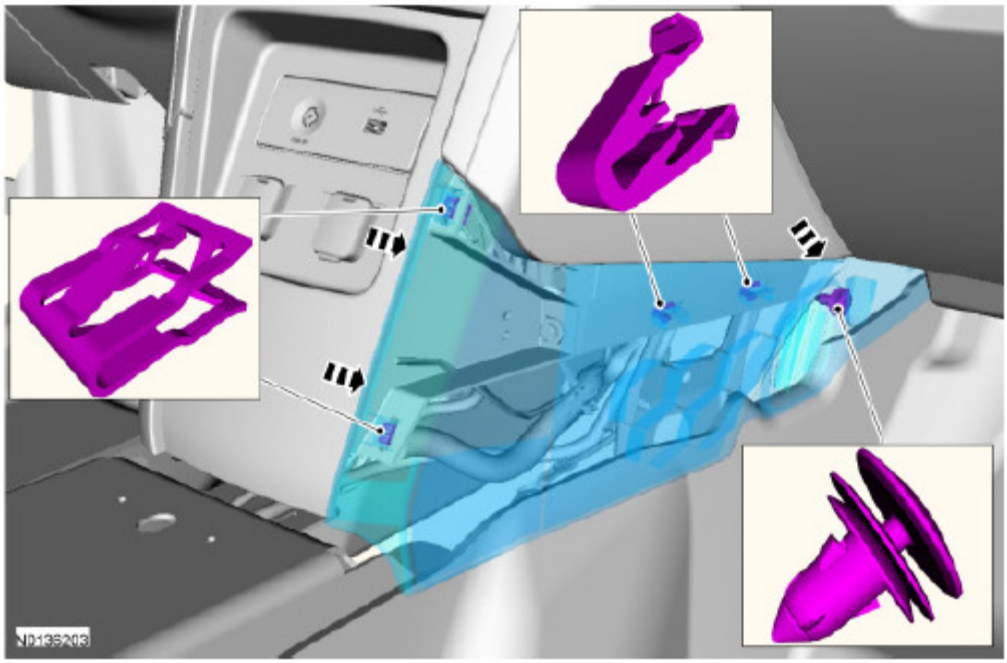
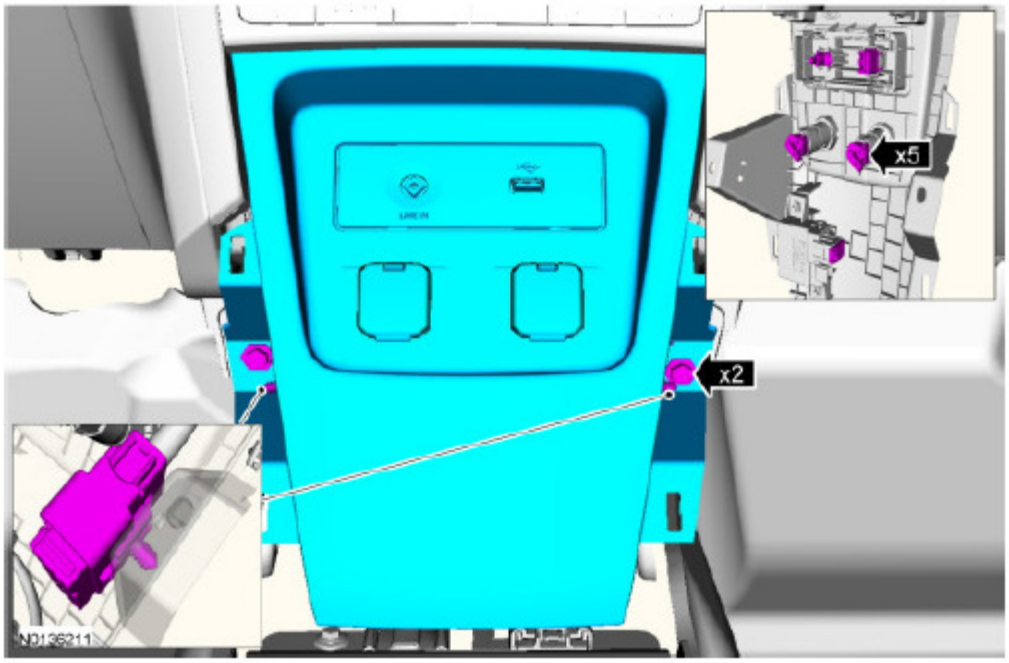


Illustration indicates location of retainers for passenger side finish panel

Repeat for driver side finish panel

# 2013 Utility Interceptor Front Power Access Point

**Remove passenger side and driver side lower center instrument side panels**




Remove the 2 fasteners

Remove panel carefully near the retention clip points

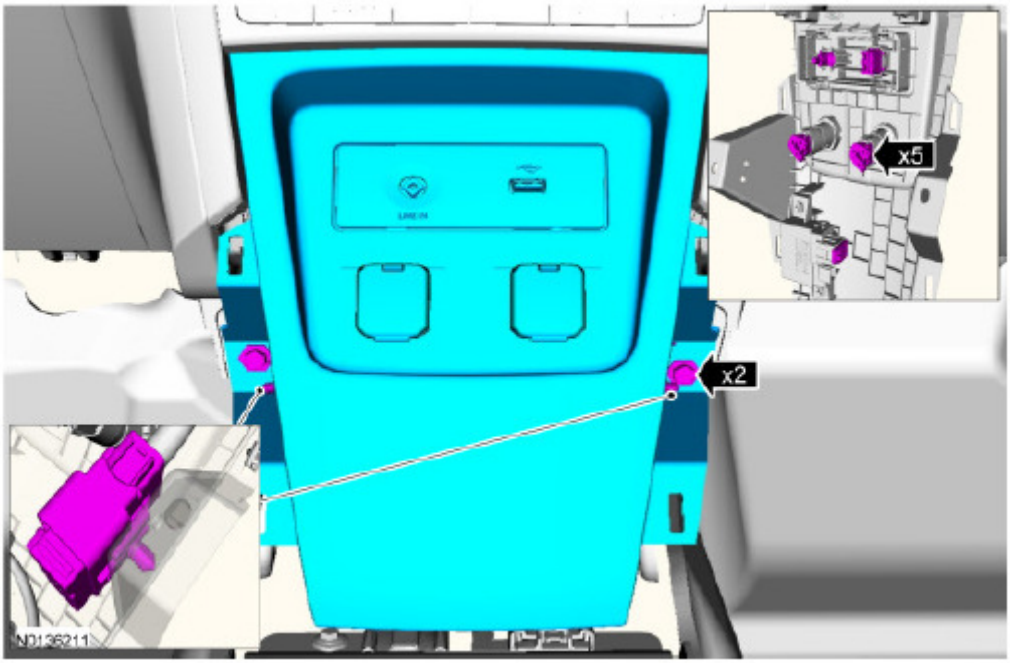
# 2013 Utility Interceptor Front Power Access Point

**Reinstall lower center instrument panel trim front panel by reversing removal procedure**

- Align the center stack to the instrument panel opening and reconnect the (4) connectors. **Note: perform "push-click-push" test process to ensure each is secure**
- Align lower driver and passenger side retention tabs located on the inside of center stack panel to the corresponding notches located in the passenger and driver side lower valance panels.
- Position retention clips on the backside of the center stack to the corresponding slots in the instrument panel.
- Push the center stack in until each of the retention clips are fully engaged. Check around the periphery of the center stack to ensure it is flush to the instrument panel upon installation. **Note: Verify the lower driver side and passenger side retention tabs of center stack panel are seated into the driver side and passenger side valance panel notch locations upon installation.**
- Re-install 2 fasteners per illustration below.
- **Tighten fasteners to 3 NM (27 lb-in)**

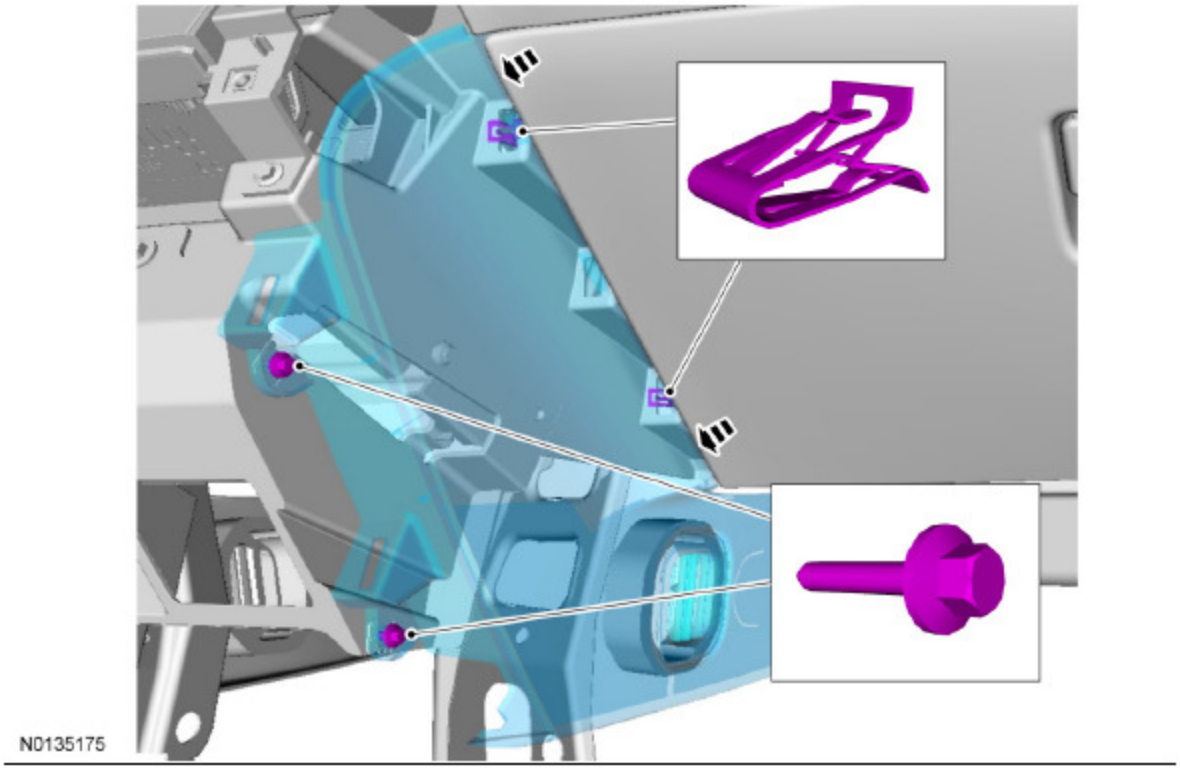
**Reinstall lower center instrument panel trim front panel by reversing removal procedure**

- Align the center stack to the instrument panel opening and reconnect the (4) connectors. **Note: perform "push-click-push" test process to ensure each is secure**
- Align lower driver and passenger side retention tabs located on the inside of center stack panel to the corresponding notches located in the passenger and driver side lower valence panels.
- Position retention clips on the backside of the center stack to the corresponding slots in the instrument panel.
- Push the center stack in until each of the retention clips are fully engaged. Check around the periphery of the center stack to ensure it is flush to the instrument panel upon installation. **Note: Verify the lower driver side and passenger side retention tabs of the center stack panel are seated into the driver side and passenger side valence panel notch locations upon installation.**
- Tighten fasteners to 2 NM (27 lbs-in)



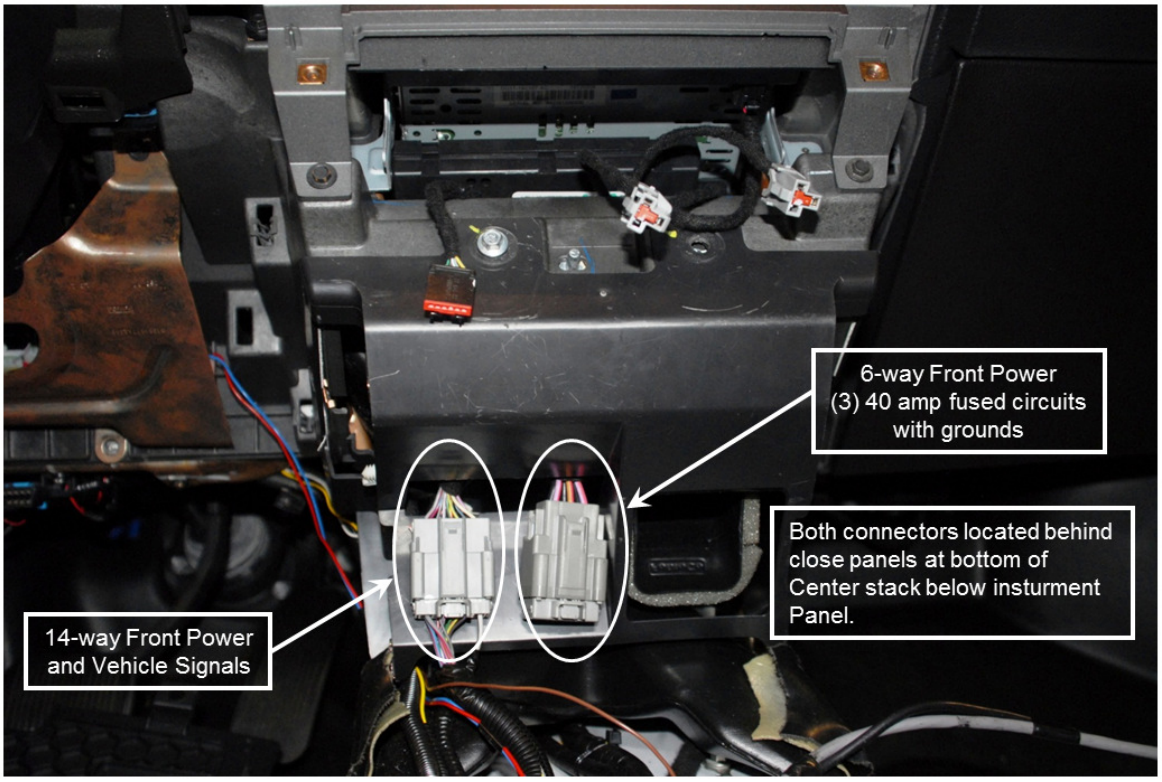
# 2013 Utility Interceptor Front Power Access Point

**Reinstall Driver Side and Passenger Side lower center instrument panel side trim panels**



# 2013 Utility Interceptor Front Power Access Point

## Front Power and Vehicle Signals Access Area

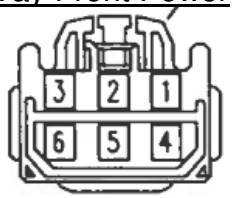



### 14-Way Front Power & Vehicle Signals

Part #: 3U2Z-14S411-BJAC

| Pin # | Description | Fuse | Wire Color |
|---|---|---|---|
| 1 | B + Feed #1 (20A) | IP #2 | GY-RD |
| 2 | Steering Wheel Switch #1 Output (1A) – Grnd | Gnrl Fnctn Module | GY-BN |
| 3 | Steering Wheel Switch #2 Output (1A) – Grnd | Gnrl Fnctn Module | WH-VT |
| 4 | Steering Wheel Switch #3 Output (1A) – Grnd | Gnrl Fnctn Module | GN-BN |
| 5 | Steering Wheel Switch #4 Output (1A) – Grnd | Gnrl Fnctn Module | YE-GY |
| 6 | Start (2 A) | BJB #95 | BN-BU |
| 7 | Run/Start #1 (20 A) | BJB #73 | WH-BN |
| 8 | B+ Feed #2 (20 A) | IP #32 | BU-RD |
| 9 | Vehicle Speed Output (VSS) | PCM | VT-OG |
| 10 | Delay Accessory (15 A) | IP #17 | GN-VT |
| 11 | B + Feed #3 (15 A) | IP #5 | YE-RD |
| 12 | Park Detect Signal (Transmission) | Shifter – Grnd | GN |
| 13 | Driver Door Ajar Signal | IP #9-Grnd | GN-VT |
| 14 | Run/Start #2 (20 A) | IP #74 | VT-BN |

### 6-Way Front Power




Part #: 3U2Z-14S411-HEA

| Pin # | Description | Fuse | Wire Color |
|---|---|---|---|
| 1 | B + (40 A) | BJB #40 | VT-RD |
| 2 | B + (40 A) | BJB #6 | BN-RD |
| 3 | B + (40 A) | BJB #16 | VT-RD |
| 4 | Ground | IP Tunnel | BK-BU |
| 5 | Ground | IP Tunnel | BK-BU |
| 6 | Ground | IP Tunnel | BK-BU |

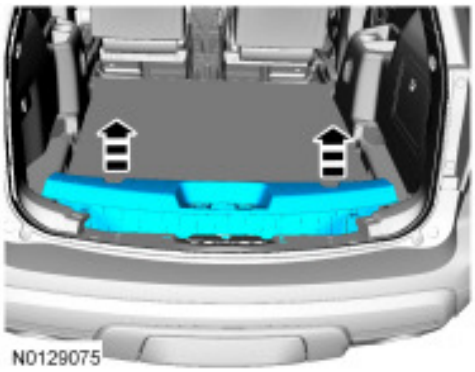
# 2013 Utility Interceptor Front Power Access Point

## Quarter Trim Panel Removal

**WARNING: Before beginning any service procedure in this section, refer to Safety Warnings in Section 100-00. Failure to follow this instruction may result in serious personal injury.**

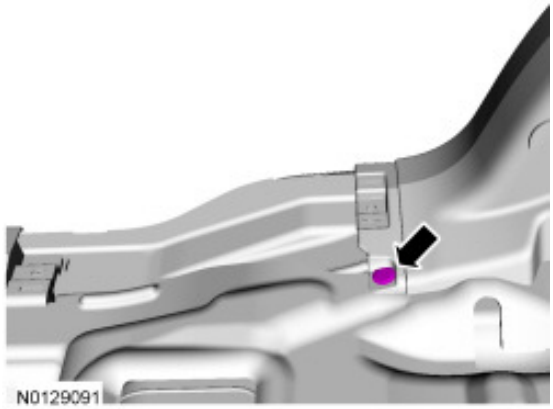
1. Position aside the liftgate weatherstrip.
2. **NOTICE: To avoid damage to the liftgate scuff plate trim panel, remove any retaining clips from the body and attach them to the liftgate scuff plate trim panel before installing.**

   Remove the liftgate scuff plate trim panel.
   1. Pull upward to release the retaining clips.
   2. If equipped, disconnect the rear passive start antenna electrical connector and remove the liftgate scuff plate trim panel.




3. **NOTICE: To avoid damage to the scuff plate trim panel, remove any retaining clips from the body and attach them to the scuff plate trim panel before installing.**

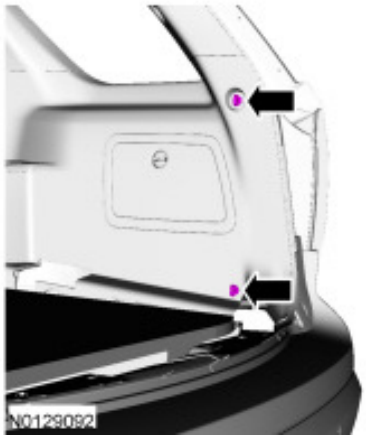
   Remove the rear door scuff plate trim panel. Refer to Scuff Plate Trim Panel.
4. Remove the quarter trim panel push pin retainer.



# 2013 Utility Interceptor Front Power Access Point

## Quarter Trim Panel Removal (continued)

5. Position the second row seat in the flat position and then tilt the second row seat forward.
6. Position the third row seat in the flat position.
7. Remove the 2 quarter trim panel tie down hooks.




8. Remove the third row safety belt anchor bolt cover on the quarter trim panel.
9. Remove the third row safety belt anchor bolt.
    1. To install, tighten to 40 Nm (30 lb-ft).
10. **NOTICE: To avoid damage to the quarter trim panel, remove any retaining clips from the body and attach them to the quarter trim panel before installing.**

    Pull the quarter trim panel toward the inside of the vehicle to release the quarter trim panel clips and disconnect electrical connectors and remove the quarter trim panel.

## Installation

1. To install, reverse the removal procedure.
    1. Transfer parts as necessary

# 2013 Utility Interceptor Front Power Access Point

**Rear Power Access** – Two fused 50 amp lines from underhood Battery Junction Box (BJB)

- Feed from BJB #1 and #2

**If you have any questions, please contact the Ford Truck Body Builders Advisory Service as shown in the header of this bulletin.**